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RESEARCH

Cambridge, *Carnaval*, and the 'Actually Existing Circularity' of Plastics

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This article draws on comparative ethnographic research on plastic consumption, (re)use, and disposal in households and collective spaces in Cambridge (England) and Montevideo (Uruguay). Focusing on practices of re-use by individuals and collectives, it argues that these constitute forms of 'actually existing circularity' that provide an alternative to circular economy schemes premised on retained corporate ownership. In the context of discussions of the circular economy that are often limited to the macro policy level, this article thus provides a degree of granularity and a focus on everyday practices. Connecting with debates around materiality, it argues both that we must play close attention to the synthetic materials that surround us in everyday life, and that a focus on materials can help demonstrate the way that commodity status can be undone through projects of collective, inventive re-use that spill out beyond the household. Finally, it points to the potentially disenfranchising elements of dominant business-friendly circular economy visions and the way that these might disrupt complex materials pathways and cultures of re-use and repair rather than straight-forward linear economies.

Keywords: plastic; waste; Uruguay; re-use; recycling; circular economy

Introduction

In the workshop of one of Montevideo's leading Afro-Uruguayan *candombe* carnival troupes, the *comparsa* La Ciudad Vieja (Old Town), drummers warm their drums by an open fire, dancers squeeze on their glittery costumes confected in the workshop by director Daniela, and Ramón orders the group's flag-bearers to take out the huge pieces of cloth and *sacudir las banderas* ('shake the flags'). Outside, a crowd has gathered in anticipation of a noisy rehearsal and is composed of neighbourhood residents, relatives of *comparsa* members, and tourists visiting the city's old port district. Deservedly, it is the dancers, drummers, and flag-bearers that will be cheered and celebrated. Yet materials also surround us and make the event possible, prominent among them the multiform, congealed petrochemical known as plastic. From the black, orange, and white nylons that give colour, lightness, and shine to this year's flags; to the bottles of water and ice with which participants hydrate themselves; to the different kinds of synthetic material that are re-used and re-worked to give shape to the shoes, collars, dresses, and tall feathered hats of the participants.

In an otherwise combative response to an article by Tim Ingold (2007) that champions attention to materials and their dynamic properties, Daniel Miller urges us to take Ingold's sensitivity to the flows of traditional materials and apply it to 'the way people come to understand, appreciate and work with plastic' (2007: 27). This article heeds that call, aware, like Miller, that ethnographers are now just as, if not more, likely to find people surrounded by and engaging with plastics as with seemingly timeless materials like stone. Plastic has invariably been represented as a global problem, yet as Gay Hawkins and colleagues (2015) argue, 'the mobilization of scale through invocations of the global – of global plastics accumulation or of a global environmental crisis – abstracts and homogenizes plastic waste', reducing it to an 'emblematic marker of ecological catastrophe without investigating exactly how the diverse material realities of plastic… as waste are performed in particular places and with particular effects' (117). The comparative research on which this paper draws was designed to explore precisely some of these local nuances of plastic engagement and economies in different fieldsites. I focused on 10 households in Cambridge and 10 in Montevideo, conducting participant observation in and around the home and in collective spaces, interviewing participants and asking them to keep a plastics diary documenting their consumption, re-use, and disposal of plastics, including recycling. These fieldsites were chosen due to my familiarity with both but also so as to explore differences and similarities between domestic plastic engagement, including repair and re-use, in the Global North and South.

The gateway to the Cambridge fieldsite was my daughter's nursery and, because I knew quite a few parents, it was easy to establish the trust necessary to gain access

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to their lives and domestic spaces. In Montevideo, meanwhile, where I had previously conducted research with waste-pickers, I chose a new fieldsite, the old town (Ciudad Vieja), initially because it had been selected to pilot new kerbside recycling containers. Access to participants there was mediated by one of the most active neighbourhood organisations, the *comparsa* La Ciudad Vieja (LCV). Not only were my fieldsites characterised by different levels of intimacy, familiarity, and access, but the groups that brought the participants together were themselves very different, shaping the make-up of the research sample and the plastics that came into each household (plastic toys, for example, were much more prevalent in the Cambridge site, because all the participants had young children). Yet in both fieldsites, I was able to build on existing relationships and conduct sustained periods of research, living in situ for a total of four months, during which time I made use of common infrastructures of consumption, repair, re-use, and disposal that place limits on the type of 'behaviour change' possible in each location.

In Cambridge, the research participants were mostly lower middle-class residents who lived in Arbury, a diverse neighbourhood that retains elements of its working-class identity and population. The occupations of participants included mental health nurse, firefighter, academic, taxi driver, and accountant, as well as a natural beautician and an overseas doctor who had been unable to work in the UK.[1] Out of 10 households, half contained an adult who was not born in the UK, and represented nationalities included Spanish, Chinese, Sudanese, and Malaysian. Montevideo's Ciudad Vieja, meanwhile, is a traditionally working-class and Afro-Uruguayan neighbourhood that is now extremely diverse. The renovated block of flats where I rented a room to some extent represented the gentrification that had taken place in the area, but walking a few hundred metres to the *comparsa*'s workshop every day meant passing by a tourist-filled pedestrianised street, low cost *pensiones* rented by Dominican migrants, and a few drug hotspots, thus providing a snapshot of the neighbourhood's composition. The Uruguayan research pool, where Afro-Uruguayans were strongly represented, was predominantly working class, featuring builders, hospital porters, administrative workers, and the largely unemployed or underemployed.

The research for this paper was carried out as part of the Cambridge Creative Circular Plastics Centre, financed by a grant from the UKRI. As the name of the research centre suggests, we were interested in circularity and creativity in relation to plastics. Circular economy ideas have been discussed since the 1970s and have been linked to at least five schools of thought—Industrial Ecology, Cradle to Cradle, Performance Economy, Blue Economy and Biomimicry—all of which have influenced the Ellen McArthur Foundation's (EMF) influential work on the circular economy and its three principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.[2] Redesigning the economy to make it more circular is one way that toxic industries like plastic might be maintained while lessening socio-environmental harm. In this article I join anthropologists who have sought to critically engage with cyclical imaginaries (Graeber 2012) and closed loops (Alexander 2016), rethinking the circular economy beyond the corporate incarnations embodied in the EMF model, which seeks alliances and funding from large multinational corporations.

Further, the article brings a degree of granularity to what are often macro-level discussions of the circular economy, through a focus on re-use, which has often been overlooked in favour of recycling schemes.[3] Re-use is an important part of 'keeping products and materials in use' and is therefore integral to the circular economy. Yet, as Isenhour and Reno have observed, 'the embodied care-work of tinkering, repairing and tending to materials upon which the formal politics of economic circularity depend, is only alluded to, at best, in mainstream formations of circular economy' (2019: 1–2), although it often features in grassroots community initiatives. According to the waste hierarchy, re-use should be regarded as preferable to recycling, and the repair and re-use of electronics in the Global South can be both more profitable and safer than the recycling of e-waste, even if the latter attracts more scholarly and media attention (Corwin 2019).

During our project, materials and natural scientist colleagues and funders were keen for social scientists to focus on 'the consumer' and 'behaviour change'. Whilst we found these categories useful, we were also keen to critically interrogate and elaborate on them, leading to a series of open questions that guided our research: Were plastic behaviours predicated on different cultural, class, and gendered relationships with the material? What did plastic mean to people in their everyday lives and how was it harnessed, collectivised, and domesticated in different life projects? What were the pathways that brought plastics in and out of people's lives? Finally, to what extent could behaviours be considered circular?

In order to answer these questions, the rest of the paper is divided into three sections. In the first, I describe common practices of plastics re-use found in Uruguay and the UK, arguing that re-use might be described as a form of 'actually existing circularity', contrasted with corporate circular economy schemes that involve companies retaining ownership over products and renting them out (such as software, furniture, and clothing). The article then moves on to explore the material culture of plastics use and re-use in and around the Montevidean *carnaval* and the Arbury carnival, delving into the materiality of particular objects and the discarded plastics that contribute to carnival costume craft. I describe such forms of re-use as subversive of property regimes, such as prolonged corporate ownership that are championed by proponents of the circular economy as ways of ensuring improved stewardship over materials. These models, I suggest in the final concluding section, alter the shape of the commodity form (from object to service) but ultimately entrench commodification while lessening the possibility that things might be socialised through non-commercial forms of re-use and re-purposing that spill out beyond individual households.

Plastics Re-use as 'Actually Existing Circularity'?

Data on the sale of, and trade in, new products is relatively easy to obtain and constitutes a large part of plastic flows. In the UK, for instance, University of Cambridge researchers, using British trade figures, estimate that 3.6 million tonnes of plastic are imported every year, while 1.6 million tonnes are produced domestically (Serrenho, p.c.). Yet any circular economy approach to plastics that seeks to minimise single-use must also attend to re-use, which often occurs in domestic environments. Re-use and repurposing often do not involve any significant change to the plastics in question, and thus minimal extra energy or carbon emissions are needed or generated. On the downside, re-use in many cases cannot go on indefinitely—but then neither can plastics recycling, with most instances effectively constituting cases of down-cycling, where a lesser quality product is created.

The plasticity of plastics—their capacity for change and transformation—has been emphasised by a range of scholars, with Roland Barthes arguing in a landmark essay that 'more than a substance, plastic is the very idea of its infinite transformation; as its everyday name indicates, it is ubiquity made visible' (1991 [1957]: 97). Bensaude Vincent (2013), meanwhile, argues that plastics have 'pure potential for change and movement' and connote 'the magic of infinite metamorphoses' (23). They also, as in Jeffrey Meikle's (1995) cultural history of plastics in the United States, provide the stuff that dreams are made of and act as the material embodiments of the flow, flux, transformations, and possibilities of cultural and societal change. Within discard studies, plastic has been represented as a polluting smog, soup, or miasma (Liboiron 2016), while within a certain vein of material culture studies it plays second fiddle to more 'noble' and ancient materials (c.f. Miller 2007). For participants in Uruguay and England, plastics in the sea were, pace Mary Douglas (1966 [2002]), plastics out of place, but plastics in the home and workshop were valuable allies in the construction of modern lives. For *comparsa* drummer Gustavo, plastic was also 'noble', capable of being moulded with simple domestic appliances, such as a hairdryer, into 'infinite' shapes and forms, from garden furniture to the *comparsa*'s lunar standard.

Studies of domestic re-use and repurposing of plastic (e.g., Berry and Isenhour 2019) demonstrate the limited but not negligible possibilities for intervening and being creative with plastic outside of the laboratory or industrial environment. Mike Michael also recognises the existence of everyday reuses of plastic in the home, through which 'carrier bags become mini-binbags…[and] margarine tubs, yogurt cartons, sawn-off plastic bottles become containers for screws, for nuts and bolts, for soil and seeds' (2013: 32). Such forms of re-use were common in the homes of research participants in both Uruguay and the UK, with particular objects prized for their re-use capacities. One of these was the small water bottle, with Uruguayan participants' diaries showing that they regularly bought 330ml plastic water bottles and then refilled them with tap water or powder-based 'juice'. Clara, an Argentine therapist living in Cambridge with her English husband and two children, kept a collection of separate bottles for each member of the household and indeed for separate occasions. These included a special sports bottle that she took to the gym, which she had altered by changing the cap so that she didn't have to unscrew it and risk it spilling onto her top while she was on the treadmill. Refilling water bottles was an economical option, and necessary for Bila, a Cuban migrant to Montevideo who said that otherwise she would be spending '200 and something pesos on water every 2 days, money that could be spent on rice, meat, and other things'. She preferred to 'boil the water, and then put it into the bottle'.[4]

Hawkins and colleagues write of 'disposable plastic bottles whose exchange value is exhausted after a single use' and argue that as water is drained from a PET bottle it becomes 'a useless solid object, something that needs to be got rid of' (2015: 116). Yet as their own research on recycling shows, the exchange value of the PET bottle undergoes transformation rather than annulment after initial consumption. From part of a commodity package enclosing the drink held inside, the PET bottle can become valuable on the market as a raw material, albeit at a variable price per kilo that will usually be many times lower than the already low cost of virgin PET. Two of my Uruguayan interlocutors, Gustavo and Ramón, both of whom were on low incomes and lived in neighbourhoods where waste-pickers and recycling depots had a visible presence, told me that they often collected their plastics in order to sell them. The idea of accumulating PET so as to sell it on the market was not something that occurred to the Cambridge research participants. This I put down partly to their higher incomes, but also to a centralisation of waste collection and recycling in the UK compared to Uruguay. In the latter country, the ubiquitous presence of waste-pickers, known as *clasificadores*, served as a reminder that recycling could contribute to household income. Among Cambridge participants, on the other hand, attempts to avoid or minimise plastic consumption and use were more common, with one family committing to going 'plastic free' for Lent, in line with a slew of plastic-free products and events launched in the UK. Such attempts to reduce the amount of plastic packaging entering the household often relied on the re-use of hard-wearing plastics, such as Tupperware, as well as a return to older materials and forms of distribution, such as glass milk bottle delivery and collection.

Yet much more common in both fieldsites than either the sale of plastic bottles as PET or the abandonment of plastic altogether was their re-use as containers. The five-litre green mineral water bottle sold by Agua Salus, a subsidiary of the multinational Danone, was everywhere to be found in Montevideo, often reused to store not water but earth and plants. I encountered these on Daniela's balcony garden, above the *comparsa* carnival workshop, and on Norma and Néstor's small patio, in the ramshackle self-constructed house that they had built on occupied land near a major junction. On a neighbourhood shopping trip

with another informant, I also found these being used extensively in a hardware shop to store a range of different products. 'They are transparent, so you can see what is inside', the shopkeeper explained. In the office of an NGO that manages a recycling plant, I met the Salus 5 again, this time being used to store bus tickets that can be collected for a charity in an example of what the bus company calls 'solidarity recycling' (**Figure 2**) (for every million bus tickets collected they donate a wheelchair). On yet another occasion I met an older woman carrying two of these bottles replete with multicoloured bottle caps that she had collected from neighbours and which she was on her way to donate to an animal shelter (**Figure 1**), a practice which also exists in the UK, Europe, and the US, though seems to be much more common in Uruguay.

In these instances, it may appear that the bottles undergo very little transformation: they were purchased containing water and in many cases they continue to do so. Yet in fact the water-bottle-as-commodity does undergo a transformation: the label, which generally contains a brand name and a host of other information, is very often one of the first things to go, representing a stripping back to a generic bottle. The bottle and lid might be re-engineered to create a more useful composite, as in the case of Clara's gym bottle. New uses might be given to the bottle entirely, as occurred with the Salus 5. Such examples constitute a widening of possibilities as the bottle becomes a generic, transparent container and is usually cut open/ disassembled in the process. If they involve the retention of an object status (a container), they do so at the expense of categorisation either as commodity or waste. Indeed, they may become enlisted in other ethical recycling practices, storing materials that are converted to social goods, such as wheelchairs.

Rivalling the popularity of the Salus 5 in Montevideo was the re-use of ice-cream tubs from national brands, such as Conaprole and Crufi, as 'Tupperware' for the storage of food. Like the Salus 5, the re-use of ice-cream tubs could also be scaled up from the domestic to the commercial level, as in the case of Diego, who used stacked Conaprole

Figure 1: Ciudad Vieja neighbour re-uses bottles for storing plastic caps to be donated.
N.B. All photographs taken by the author.

Figure 2: The same bottle used for storing old bus tickets.
N.B. All photographs taken by the author.

tubs to store bike parts, tools, and accessories in his bicycle workshop (**Figure 3**). In Cambridge, I often found ice-cream tubs being re-used around people's kitchens, but Clara was rather particular in only wanting to re-use containers that were transparent so that she could see what is being stored inside. 'Can't they all just be transparent and have a paper label?', she wondered, 'we know it's ice cream and actually I think it would be more appealing because you can see it all'. In the end, she managed to source an affordable ice-cream brand (Kelly's) with a transparent lid, onto which she herself stuck a paper label identifying vegetarian food for my partner, cooked and brought round for us after the birth of our second child (**Figure 4**). The social life of the ice-cream tub, now re-named, continues, with histories, relations, and acts of kindness and neighbourliness inscribed onto its surfaces.

I would suggest that the practices of re-use and repurposing explored in this section constitute, to various degrees, a return to the materials of which objects, in this case commodities, are made. Sometimes, we can observe, there is an ontological struggle between the old and the new purpose to which such materials are put. Take, for example, the Kelly's ice-cream tub and the low-intensity struggle between my mother-in-law, who places it into the recycling bin, and my attempts at re-use. For her, the tub has served its purpose, indeed multiple purposes, and now should be discarded. It is not that my mother-in-law is against re-use, indeed she regularly re-uses clear transparent take-away boxes that come with Indian meals. Unlike these, however, the Kelly's tub comes with a wealth of advertising and information, added to by the new paper label. There is no hiding what this container previously contained.

In the case of Diego's bike workshop, the transparency of plastic containers prized by both Clara and the hardware store owner was replaced with the option of inscribing information in permanent marker, Tipp-ex, or using a sticker. Here the plastic is not itself modified but rather is added to, becoming 'reinformed' (Barry 2005) with new information. Such examples suggest that re-use need not

Figure 3: Ice-cream tubs re-used in Diego's bike workshop.
N.B. All photographs taken by the author.

Figure 4: Kelly's ice-cream tub re-used for food storage and donation in Cambridge.
N.B. All photographs taken by the author.

only occur in a restricted domestic sphere but may also spill out beyond the home and even into small industry. Yet Mike Michael (2013) points out the 'impoverished possibilities for re-inventing and reforming plastic' (32), noting that 'only certain industrial actors have the capacities to make and mould plastic' (32) in any systematic way. The '(domestic) human hand', he argues, is marginalised. In the above examples of re-use, the possibility of transforming and altering plastic appears limited. What skill, materials, and knowledge are necessary in order to repair a plastic item, for instance, extending its life and longevity and thus contributing to a more circular economy?

With this question in mind, I was directed to a Cambridge repair café by Clara, who had attended such gatherings several times in order to fix her children's toys. The repair café model has spread around the world after being established in Amsterdam by Martine Postma, who went on to set up the Repair Café Foundation to support similar initiatives around the world (see Charter and Keiller 2016). The mobile, roving event that I attended was organised by Circular Cambridge, a venture organised by the Cambridge Carbon Footprint (CCF) charity, in conjunction with other local public and private sector bodies. It was held in one of the empty stores of the Grafton Shopping Centre, a productive use of space at a time when 'high street' town centre shops in the United Kingdom were suffering due to multiple factors, such as competition from online shopping. I sat with Guy and Thomas, regular volunteers with backgrounds in chemistry and electrical engineering. Guy, who ran his own chemicals business, was a big supporter of plastic as attested to by the following excerpt from our interview:

> I have to say I absolutely love plastic. I think it's an incredible material which is so versatile and useful and saves a lot of weight. And it's fantastic because it doesn't break down and it's resistant to bacteria but it's also terrible because it doesn't break down and it's totally resistant to bacteria. So yes, I don't like that plastic gets totally demonised and I will gladly use it but it does disappoint me to see it being used in a single-use application.

The kind of items that Guy and Thomas were invited to tinker with were usually plastic-encased electro-domestics, such as toasters, irons, kettles, lamps, electric toothbrushes, and games consoles. Mostly, the plastic casing simply had to be disassembled in order to access and repair electrical faults. Sometimes, however, plastic itself was the problem and had to be repaired, as in the case of a PlayStation 2 that Guy had inspected and tried to fix. As he showed me a photograph, he explained how he had tackled the repair:

> So, when I opened it up, the part [disk release notch] wasn't anywhere to be found inside so what I did was I got a bit of scrap plastic, drilled holes in it, collected the plastic shavings, melted it with a solvent and made it into a putty, and then moulded it into shape and you can very clearly see two parts on that photo. One of them is brand new, well not brand new but as intended and the other one is a disgusting, very clearly hand-moulded piece of plastic. But it was the right shape and it worked.

The scrap plastic that Guy used was Acrylonitrile Butadiene Styrene (ABS), which, he noted, was 'very easy to melt with acetone', a chemical that he was able to acquire due to his chemicals business but that can also be sourced on the internet. His co-worker Thomas was slightly more sceptical, adding that this wasn't something that someone could simply pick up in a hardware store or a chemist and that while you could buy it online, you 'don't want to end up on a terrorist list'. The PlayStation was the kind of repair, Guy noted, that could be carried out with minimal tools, yet it required a knowledge of chemicals, where they could be sourced, the reactions of particular plastics (e.g., that ABS could be melted with acetone), as well as the technical skill involved in the procedure. Not everyone shares Guy's level of expertise or enthusiasm, but then this is exactly why the repair café existed, collectivising skills on a non-profit basis in order to extend the life of products, an explicit aim of the Circular Cambridge initiative.

Events like free repair cafés, skill-shares (Rosner 2014), and creative uses of plastic bottles serve to bolster what Carenzo and Becerra (2018) call 'circularity from below' and which I define as 'actually-existing circularity': non-corporate, often unrecognised, and myriad ways in which people attempt to keep materials in use rather than relegate them to landfill. The fact that the repair café that I attended took place in a shopping centre, giving people the option to bring in items for repair, rather than purchase new ones, was significant, for it allowed people to momentarily switch from being 'consumers' to 're-users' or 'repairers', undermining the conceptual assumptions integral to our 'consumer-focused' research project. It also allowed people to retain ownership over things, which they might themselves socialise in different and non-commercial ways.

All Cambridge research participants stressed, for instance, that they preferred to donate toys that their children had grown out of to family, friends, or charity shops. These gifting practices might be usefully thought of not as one-off donations but, as in the anthropological tradition of gift analysis established by Marcel Mauss (1990 [1925]), transactions that spark reciprocal relations between different households. Some of these might be considered problematic: the toys that were left over after several Circular Cambridge toy swaps were apparently shipped to children in Nigeria, a gift that some critics could see as a form of North-South dumping. Yet, taken together, such gifting practices stand in contrast to emergent circular economy property regimes that are predicated on a rental model, where a company retains ownership over commodities, ensuring their maintenance and repair but also maintaining control and earning rental profits.

While organisations such as the EMF have successfully managed to rally many companies to the circular economy cause by assuring them that it can be a very profitable business, events such as the Cambridge repair café are far removed from the profit motive, relying instead on the promotion of community ties and the sharing of skills. Elsewhere, repairs are carried out on a commercial basis, and their costs, often similar to the cost of a replacement in the Global North, can be prohibitive. The non-commercial, free service offered by repair cafés, on the other hand, mean that these can become an automatic first port of call in an attempt to maintain the functional life of an object. As in the Cambridge case, the transparent and didactic elements of repair—whether of plastic-encased electronics or clothing—can ensure that the 'client' acquires the skills needed to carry out a subsequent repair themselves, thus representing a commoning of knowledge. Collective repair spaces also allow people like Clara, who subsists on a low income and whose time is largely taken up with family and church responsibilities, to avoid unnecessary expenditure and reduce her 'plastic footprint' in ways that complement her domestic re-use of transparent packaging containers and recycled craft activities. They highlight how the limitations of the household, both as a unit of analysis and as an actor engaged in plastic activism, might be overcome through collective community initiatives located firmly in the public sphere. In the following section I turn to further community events in which I participated—*carnaval*/carnival—expanding on the culture of plastic re-use that I encountered in both fieldsites.

Carnival Consumption

Montevideo

While my research was designed to focus on households, many of the Uruguayan research participants were recruited from the LCV carnival troupe. The months running up to the carnival parade—*las llamadas*—constitute an intense period of activity for the different *comparsas*, during which they rehearse several times a week to perfect the choreography and rhythms of their drummers, dancers, and flag-bearers. Such was the situation of the *comparsa* LCV as I joined them for plastics fieldwork in the crucial six weeks before the 2020 *llamadas*. Many of the *comparsa* members practically lived at the workshop during this time, and they talked about it as their 'second home', where most of their plastic consumption, craft, and disposal took place. Such an arrangement challenged the idea of the closed 'household' as the unit of study and opened up the research to the possibilities of other forms of collective plastic engagement. Rather than stand on the side-lines watching rehearsals, I decided to join the troupe as a flag-bearer, leaving Uruguay the very morning after the parade, make-up and glitter still clinging to my skin.

Given the cost of designing and sourcing material for up to 150 members of each troupe, as much synthetic fabric for the costumes as possible is salvaged, and *comparsa* director Daniela excitedly told me that the group 'loved recycling'. '*Reciclando*', for Daniela, meant the re-use or repurposing of materials within the *comparsa*, rather than participation in formal recycling chains. Daniela's family was well integrated into the life of the neighbourhood and the port: she was a local councillor and community activist, while her husband and two sons, who were also drummers in the *comparsa*, worked loading and unloading the huge container and cruise ships that arrived daily in the city. The port was located at a stone's throw from the *comparsa* workshop and was where most of Montevideo's virgin plastics were disembarked. It was also a valuable source of recyclable material, as informal waste-pickers recently excluded from its lucrative circuits informed me (also see O'Hare 2017a). Yet rather than exchange value, Daniela was interested in the use-value of the discarded plastics that her family brought back from the port, as she explained:

> For this year's drummers' outfits, we used a recycling of polyurethane which came in some massive rolls on the cruise ships, where the packaging is used for fragile things and we use it to give body and structure to the costumes…My husband and sons work in the port and found this roll in the rubbish, and they brought it to me, so that we could use it for something, and we have now used it three years running for the *comparsa* costumes.

Another useful discard for this year's costumes had come from a *comparsa* member who worked for a drinks company and consisted of sheets of corrugated polypropylene, which had previously been used to separate rows of bottles as they were being delivered. As Daniela explained, these are recycled plastics given 'a second or third opportunity by the *comparsa*' as they are transformed into the stiff collars worn by the drummers and flag bearers (see **Figure 5**). The polypropylene sheets were 'informed' materials (Barry 2005), containing printed symbols and text that indexed material composition, origin, and even current property regime. These included the letters PP, indicating polypropylene, and the recycling symbol, normally signifying that a material could be recycled but perhaps also indicating that it was made of recycled material. Printed text informed us that the sheets had been produced by 'Dafelir', a company that describes itself as a 'leader in Cartonplast'.

The name Cartonplast is a portmanteau of carton, meaning cardboard in Spanish (*cartón*) and Italian (*cartone*) and plast, for plastic. The name thus indexes the material (cardboard) that the Italian inventor Marco Terragni sought to replace with his new product in the 1970s. What neither Terragni nor Dafelir surely foresaw was Cartonplast being integrated into the costumes of members of the Comparsa LCV during the Uruguayan *llamadas* of 2020. This was not least because, according to another piece of crucial information printed upon them, the sheets in question remained the property of 'CCU', the Compañía de Cervezerías Unidas (United Beer Company), a Chilean beverage multinational in which the Dutch beer giant Heineken holds majority shares.[5] Although seemingly inert and estranged from the company, the Cartonplast still voiced a property claim from the CCU.

Figure 5: Flat polypropylene at various stages of incorporation into the *comparsa* costumes.
N.B. All photographs taken by the author.

All the information on the *comparsa*'s sheets of Cartonplast seemed to suggest its situatedness within a circular economy. It was made of recycled material, was durable, was long-lasting and re-usable, and was recyclable, a process for which CCU was responsible, because it apparently retained ownership over the product. The arrival of the sheets at the home of a carnival troupe was one of those unexpected detours from the perfect circles of circular economies that are unlikely to be found in any business spreadsheet or circular economy plan. Indeed, given the ongoing and unextinguished property claim, by donning the garb of a comparsa *portabanderas* (flag bearer) I was, it seems, engaging in a form of subversive re-use.

The preparedness of the *comparsa* relied on freely sourced materials, such as the polyurethane and polypropylene that were accessed as perquisites of work in the port and beverage company respectively (see Linebaugh 1991). The donation of surplus materials as a means of creating and strengthening ties of kinship and friendship is something previously observed among Montevideo's waste-pickers (O'Hare 2017b). It now resurfaced at the *comparsa*, a way that Daniela's friends and family members could ensure that the troupe might dazzle the judges with their outfits, as well as the synchronicity of their drum beats and choreographed dance steps. The donation and distribution of free material and labour were part of the social knit of the *comparsa*, small socio-material gestures that sustained this proud community asset.

Cambridge

The Arbury carnival, which was established in 1977 to celebrate the Queen's silver jubilee, is, by contrast to that of Montevideo, a much more local affair that has nevertheless attracted up to 5,000 spectators in recent years. The parade is made up of floats from different community groups, including local nurseries and schools, armed forces veterans, and musical and dance collectives, such as a belly dancing troupe and a samba band. In 2019, I joined for the first time, participating in the section of the parade made up of children, parents, and educators from my daughter's nursery school, which included many of my research participants. Together with my partner, we also attended a costume workshop organised by the carnival in association with one of Cambridge's foremost art galleries, Kettle's Yard.

The workshop organiser, Anu, regularly collaborates with the Arbury carnival as well as Cambridge's larger Strawberry Fair and told me that she made most of her costumes from 'repurposed materials'. When I interviewed her in her home via Zoom, some of these creations were visible in the background, such as a bird costume that she had made out of an old sports umbrella, fabric, and vinyl records and that, she told me, 'represented freedom of

movement'. Most of the items in her house, she explained, had either been sourced from landfill, donated as gifts, or bought 'pre-loved'. Anu told me that an Australia 'rainbow warrior' aunt, who used to cut the brand labels from her clothes so as not to advertise them, had inspired her own environmental 'craftivism'. She engaged in remarkably similar re-use practices to those of Daniela in Montevideo, from the repurposing of old containers as balcony plant pots to a penchant for making extravagant headdresses from heterogeneous objects, the latest of which had been crafted from strips of laminated paper peeled back from the foam used in the assembly of protective anti-COVID-19 visors.

A self-confessed 'skip rat', Anu told me that she would regularly return from trips to London with the boot of her car filled with objects sourced from various skips. More recently, she had embraced the language and initiatives of the circular economy, joining a group of artists called 'Circulart' who use repurposed materials in displays around the city. Yet she was also aware of the contradictions and tensions involved in circular economy and re-use practices. First, she made sure that her own creations were re-used and shared rather than being 'put at the back of the closet' or themselves discarded. She also criticised artists for paying lip service to the circular economy and using the term as a marketing tool for their work: social inclusion and accessibility were crucial both to her practice and to her conceptualisation of the circular economy. Finally, whilst she made use of schemes such as the local government-run 'Cambridge scrap shop', which made discarded industrial and commercial objects available to the public at cut-price rates, she also criticised the increased enclosure of waste on city streets. Whilst household skips could still be safely rummaged through, she found that commercial refuse areas were increasingly fenced-off and feared that 'theft by finding' clauses made 'skip rats' like herself vulnerable to prosecution.

Anu's free costume workshop can be linked back to the repair café discussed in the previous section, as it involved the passing on of craft skills that made the purchase of new costumes for the parade unnecessary. Just as with the Montevidean *comparsa*, some new materials were purchased for the costumes but most was re-used, from the scrap fabric left over from other community art projects, to domestic items that we were encouraged to incorporate into our children's costumes, including the classic cardboard toilet roll core, which we used as part of our daughter's pirate costume. The costume also drew on the plastic 'stocks' that we possessed at home, a range of objects that were put to new uses and employed in a new assemblage: the pirate ballerina. This was made up of plastic mesh tutu made in the workshop and a plastic sword sourced from the scrap shop, which was fitted into a belt made from a punctured inner bike tube.

On the day of the parade, plastic came in particularly handy, as a typically rainy English summer's day had the parents and educators reaching for umbrellas, capes, raincoats, and transparent plastic pram covers. The Arbury carnival, or at least our children's float, involved less obvious instances of industrial discards being used to fashion costumes in a systematic way than was the case in Montevideo. Yet the circular economy was present in more direct ways. CCF had a stall at the carnival, where they encouraged people to get involved in changing their own behaviour, lobbying parliament, and attending their repair cafés. In one of the more innovative collaborations, Cambridge Food Cycle were also asked to provide 200 vegetable burgers made from food waste.[6] Through such initiatives, the kind of re-use and make-do craft that has traditionally characterised the creation of such carnival staples as floats and costumes has come to be accompanied by more explicit circular economy schemes.

Discussion

This paper is concerned with the diverse ownership models and activities that might contribute to, or fit within, a circular economy. Those most discussed in policy circles are largely corporate-led and often framed in the language of 'service', 'sharing', or 'performance', through which companies retain ownership over products that are effectively rented to customers.[7] The performance of a product, rather than the product itself, becomes the commodity. Deposit return schemes (DRS) are another popular option undergoing a come-back in Europe, whereby customers pay a deposit for a full glass or plastic drinks bottle that can be redeemed when the empty bottles are returned. Germany's 'pfand' scheme (Oltermann 2018) has been celebrated in this regard for contributing to higher recycling rates, while Coca-Cola Brazil (Packaging Europe 2020) has invested heavily in a similar operation but where its thicker plastic bottles are re-used rather than recycled. It is worth noting that deposit return schemes are not new and indeed have been the rule rather than the exception for glass bottles in particular in many parts of the world (License 2020).

What the 'sharing' and Brazilian DRS schemes share is that the circular loops that they implement bring objects (bottles, games, durable goods) back to the same company rather than allowing them to remain in the hands of individuals who might, as we have seen in this article, repurpose them in creative ways. Explicitly in the case of sharing economy schemes and implicitly in that of plastic bottles, objects are rented rather than purchased by consumers. Yet at best this is a transformation of the commodity form—nowhere in the kind of circular economy schemes championed by the EMF is the logic of commodity production and multinational profit challenged. These models tend to overshadow existing, non-corporate practices of re-use and re-purposing such as those evidenced in this article and might even put them at risk, for the very fact that individual ownership is not conferred makes it increasingly difficult to decommodify and transform objects in a deeper sense through their donation, alteration, and recirculation in family, friendship, and kinship networks.

Ownership models where services rather than physical goods are sold are often framed as contributing to the 'dematerialization' of the economy: the materials go but

the commodity remains through its digitization or servitisation.[8] Where things are re-used, in contrast, I suggest that this often represents a return to the materials that constitute them and an alienation from their commodity status. In his article 'Materials against materiality', Tim Ingold (2007) chastises material culture and materiality scholars for not paying sufficient attention to materials and how they are caught up in currents of active transformation in the world. I am convinced that there is room for both 'materials' and 'materiality' in our theoretical toolbox yet believe that Ingold's focus on materials might prove useful for a discussion of the circular economy. He notes that studies of material culture often focus on consumption rather than production, arguing that 'at this point materials appear to vanish, swallowed up by the very objects to which they have given birth' (Ingold 2007: 9). Yet, Ingold argues, 'the materials are still there and continue to mingle and react as they have always done, forever threatening the things they comprise with dissolution' (Ingold 2007).

In the case of the Cartonplast used by the *comparsa*, people play an active role in the dissolution and reshaping of this object previously used to separate trays of other commodities: they at once consume the material and produce a new object. Crucially, what is cut up in this example is not only the material itself but its commodity status, the regime under which it remains 'property of the CCU'. Any tightening of the ownership over such materials by the Chilean multinationals that own significant parts of Montevideo's port and its beverage industry might be portrayed by circular economy advocates as actions to 'close the loop' in the sense of transforming the linear death of a product (disposal) into its rebirth (recycling). Yet these attempts also entail the construction of a corporate loop, one which in this case would have excluded the *comparsa*, making them that little bit more materially bereft and in need of financial support that was not always forthcoming. Such outcomes, I would suggest, are one of the consequences of circular economy initiatives that are often good for business, potentially good for the environment, but bad for groups such as waste-pickers or, in this case, working class carnival troupes that have long survived and thrived not only on cultures of repair and re-use but on access to discarded materials. This need not necessarily be the case, of course, and this paper's appeal, paraphrasing Gutberlet and Carenzo (2020), is to place such examples of actually existing circularity at the heart of a new circular economy, giving them the credit that they deserve.

Conclusion

The capacity to transform plastic may be limited at a domestic level, but this paper has suggested that we need not ourselves be limited by a household/industrial division that occludes messy, collective spaces, such as emergent repair cafes and carnival craft workshops. The decision to expand the focus of the article beyond the bounds of the individual household and consumer and into shared collective spaces was methodological—it stemmed from attending to people's practices and movements during participant observation. Yet it also has conceptual implications for plastics research, which often unquestioningly takes the consumer and the household as empirical units of analysis. Households are extremely porous with regard to plastic, featuring continual inflows and outflows of plastic gifts, while many instances of plastic consumption, repair, and re-use occur outside of the home altogether. In many such spaces of 'subversive re-use', this article has shown, the profit motive is marginalised, commodities cut open, ownership and skills collectivised, and the materiality of plastic, or the properties of plastic materials, harnessed to life projects that spill out beyond narrow conceptions of household economy.

We should not, of course, draw a false dichotomy between corporate circular economy schemes and practices of domestic re-use and recycling. These often operate at different scales and are not always mutually exclusive. Yet just as the earth has finite resources, the circular economy is in certain respects a zero-sum game: if an object is owned by a company, then it is not owned by an individual or a different social collective; if Coca-Cola 'closes the loop' on all of its PET bottles, returning to the previous refill model used with glass, then these fail to enter the waste commons, where they can be taken advantage of by waste-pickers, local governments, or indeed, carnival troupes. The idea of 'actually existing circularity' does the conceptual work of recognising that official and corporate circular economy schemes are rolled out onto, and transfigure, not simple linear economies of production, consumption, and disposal but complex materials pathways, unpredictable journeys by way of which things move through different regimes of value and valuation (Appadurai 1986; Thompson 1979). At the same time, this article has highlighted that contributions to the circular economy need not always involve the *circulation* of materials, which might be kept in use through their continual re-use at home.

Notes

[1] This woman's husband, also Sudanese, was a qualified lawyer, who now worked as a taxi driver: neither had been able to have their professional qualifications validated in the UK.

[2] The Ellen MacArthur Foundation is a UK based charity founded by British sailor Ellen MacArthur, which works with corporate partners in order to support a transition towards a more circular economy and has been influential on the world stage, encouraging a series of countries and corporations to sign up to 'plastic pacts' to make the plastics industry less environmentally damaging and more circular.

[3] In Uruguay, for instance, I was told by a government Circular Economy coordinator that they were considering stopping financing for recycling schemes because they made up the overwhelming majority of projects seeking Circular Economy starter funding.

[4] It is worth noting the public debate over the safety of re-using plastic bottles with regard to health. PET does not, for instance, contain Bisphenol A (BPA), which has

been known to leach and can function as an endocrine disruptor in humans. A study by Winkler et al. (2019) concludes that screw cap water bottles do release microplastics when re-used, yet the effects of microplastics on human health has not been adequately researched. Beyond plastic, it is advised that bottles should be discarded when damaged so as to avoid the accumulation of bacteria (See also Pathak 2020).

[5] In Uruguay, the company imports several brands of beer, including Heineken, and owns the soft drinks brand Nix and the mineral water brand Nativa.

[6] This group hosted a free monthly community meal in a local Arbury church made from food discarded by a range of local supermarkets and food suppliers.

[7] To a certain extent, digital goods, such as games, editing suites, and films, are the pioneers here, but the rental of durable goods, such as tools, washing machines, car parts, furniture, and clothing, is also expanding.

[8] Digital products do not necessarily imply a lower use of materials of course because they are accessed through electronic devices, which contain a wealth of different metals and minerals in addition to plastic.

Competing Interests

The authors have no competing interests to declare.

References

Alexander, C. 2016. When Waste Disappears, or More Waste Please! *RCC Perspectives*, 1: 31–40. DOI: https://doi.org/10.5282/rcc/7391

Appadurai, A. (ed.) 1986. *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511819582

Barry, A. 2005. Pharmaceutical matters: The invention of informed materials. *Theory, Culture & Society*, 22(1): 51–69. DOI: https://doi.org/10.1177/0263276405048433

Barthes, R. 1991 [1957]. *Mythologies*. New York: Noonday Press.

Bensaude Vincent, B. 2013. Plastics, materials, and dreams of dematerialization. In: Gabrys, J, et al. (eds.), *Accumulation: The Material Politics of Plastic*. London: Routledge. pp. 17–29.

Berry, B and **Isenhour, C.** 2019. Linking Rural and Urban Social Economies through Reuse and Repair. *Journal for the Anthropology of North America*, 22(2): 112–114. DOI: https://doi.org/10.1002/nad.12103

Carenzo, S and **Becerra, L.** 2018. Epistemic, political and techno-cognitive facets of a Circular Economy 'from below' perspective: The case of waste picker's cooperatives in Greater Buenos Aires. In: 'Circular Economy Disruptions – Past, Present and Future' symposium, University of Exeter, on 17 May 2018.

Charter, M and **Keiller, S.** 2016. The Second Global Survey of Repair Cafés: A Summary of Findings. Available at: https://www.semanticscholar.org/paper/The-second-global-survey-of-repair-caf%C3%A9s%3A-a-summary-Charter-Keiller/eefae4fa18581395083c968c87646d3d366f8c9d?p2df

Corwin, J. 2019. Between Toxics and Gold: Devaluing Informal labor in the Global Urban Mine. *Capitalism, Nature, Socialism*. DOI: https://doi.org/10.1080/10455752.2019.1690533

Douglas, M. 2002 [1966]. *Purity and Danger*. London: Routledge. DOI: https://doi.org/10.4324/9780203361832

Graeber, D. 2012. Afterword: The Apocalypse of Objects—Degradation, Redemption and Transcendence in the World of Consumer Goods. In: Alexander, C, et al. (eds.), *Economies of Recycling*. London: Zed Books. pp. 277–290. DOI: https://doi.org/10.5040/9781350219823.0006

Gutberlet, J and **Carenzo, S.** 2020. Waste Pickers at the Heart of the Circular Economy: A Perspective of Inclusive Recycling from the Global South. *Worldwide Waste: Journal of Interdisciplinary Studies*, 3(1): 1–14. DOI: https://doi.org/10.5334/wwwj.50

Hawkins, G, Potter, E and **Race, K.** 2015. *Plastic Water: The Social and Material Life of Bottled Water*. Durham: MIT Press. DOI: https://doi.org/10.7551/mitpress/9780262029414.001.0001

Ingold, T. 2007. Materials Against Materiality. *Archaeological Dialogues*, 14(1): 1–16. DOI: https://doi.org/10.1017/S1380203807002127

Isenhour, C and **Reno, J.** 2019. On Materiality and Meaning: Ethnographic Engagements with Reuse, Repair & Care. *Worldwide Waste: Journal of Interdisciplinary Studies*, 2(1): 1–8. DOI: https://doi.org/10.5334/wwwj.27

Liboiron, M. 2016. Redefining pollution and action: The matter of plastics. *Journal of Material Culture*, 21(1): 87–110. DOI: https://doi.org/10.1177/1359183515622966

Linebaugh, P. 2003 [1991]. *The London Hanged*. London: Verso.

Mauss, M. 1990 [1925]. *The Gift: Forms and Functions of Exchange in Archaic Societies*. London: Routledge.

Meikle, JL. 1995. *American plastic: A cultural history*. New Brunswick: Rutgers University Press.

Michael, M. 2013. Process and Plasticity: Printing, Prototyping and the Prospects of Plastic. In: Gabrys, J, et al. (eds.), *Accumulation: the Material Politics of Plastic*. London: Routledge. pp. 30–46.

Miller, D. 2007. Stone age or plastic age? *Archaeological Dialogues*, 14(1): 23–27. DOI: https://doi.org/10.1017/S1380203807002152

O'Hare, P. 2017a. The Uruguayan Recyclers Union: Clasificadores, Circulation and the Challenge of Mobile Unionism. In: Ngwane, T, et al. (eds.), *Urban Revolt: Taking the Spirit of Marikana & Ayotzinapa into the Global South.* London: Haymarket Press.

O'Hare, P. 2017b. *Recovering Requeche and Classifying Clasificadores: An Ethnography of Hygienic Enclosure and Montevideo's Waste Commons*. Unpublished thesis (PhD), University of Cambridge.

Oltermann, P. 2018. Has Germany hit the jackpot of recycling? The jury's still out. *The Guardian*, [online access at https://www.theguardian.com/world/2018/mar/30/has-germany-hit-the-jackpot-of-recycling-the-jurys-still-out last accessed 11 December 2020].

Packaging Europe. 2020. Reuse: A closer look at Coca-Cola Brazil's unique returnable bottle initiative. 11.2.20. Available at: https://packagingeurope.com/coca-cola-brazil-returnable-bottle-initiative/ [Last accessed 22 June 2020].

Pathak, G. 2020. Permeable persons and plastic packaging in India: from biomoral substance exchange to chemotoxic transmission. *Journal of the Royal Anthropological Institute*, 26: 751–765. DOI: https://doi.org/10.1111/1467-9655.13365

Rosner, DK. 2014. Making Citizens, Reassembling Devices: On Gender and the Development of Contemporary Public Sites of Repair in Northern California. *Public Culture*, 26(1): 51–77. DOI: https://doi.org/10.1215/08992363-2346250

Thompson, M. 1979. *Rubbish Theory*. Oxford: Oxford University Press.

Winkler, A, et al. 2019. Does mechanical stress cause microplastic release from plastic water bottles? *Water Research*, 166(115082). DOI: https://doi.org/10.1016/j.watres.2019.115082

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